

Electrical connection	Connection, D Sub 15 poles,
Sensor cable	
for analog values only	
without degas-function	4 poles plus screening
for analog values	
with degas-function	5 poles plus screening
all functions	
incl. RS232C interface	7 poles plus screening
Cable length (24 VDC)	≤35 m (4/5/7x0.25 mm ²)
	≤50 m (4/5/7x0.34 mm ²)
	≤100 m (4/5/7x1.0 mm ²)
For operation with RS232C interface	≤30 m

Materials on the vacuum side

housing, supports, screens	stainless steel
feedthrough	NiFe nickel plated
isolator	glass
cathode	Ir, Y ₂ O ₃
cathode holder	Mo
Pirani element	W, Cu

Internal volume	
120 90, 120 91, 230030	≈24 cm ³
120 92, 120 94, 230031	≈34 cm ³
Pressure	≤2 bar (absolute)

Admissible temperatures

storage	-20 ... +70 °C
operation	0 ... +50 °C
bake out	150 °C (without electronics unit)

Relative humidity

year's mean	≤65% (no condensation)
during 60 days	≤85% (no condensation)

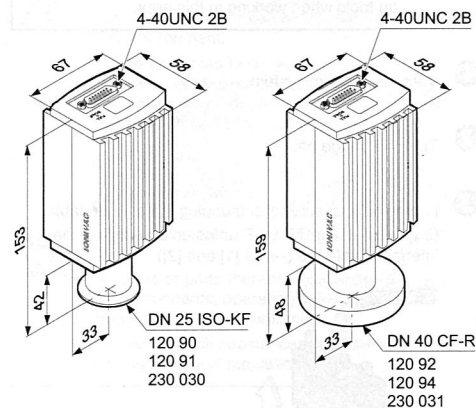
Use

	indoors only altitude up to 2000 m
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Type of protection

	IP 30
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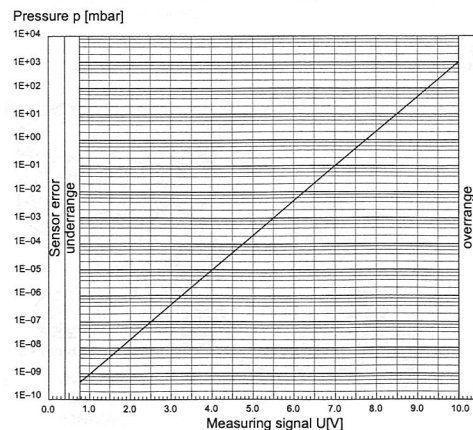
Dimensions



Weight

120 90, 120 91	285 g
120 92, 120 94	550 g
230030	430 g
230031	695 g

Measuring signal vs. pressure



$$p = 10^{(U-7.75)/0.75+c}$$

U	p	c
[V]	[mbar]	0
[V]	[Pa]	2
[V]	[Torr]	-0.125

where p pressure
U measuring signal
c constant (pressure unit dependent)

Gas type dependence

For gases other than air, the pressure in the indication range $p < 10^{-3}$ mbar can be determined by a simple conversion:

$$p_{\text{eff}} = K \times \text{pressure indicated}$$

Gas type	Calibration factor C	Gas type	Calibration factor C
He	5.9	air, O ₂ , CO, N ₂	1.0
Ne	4.1	H ₂	2.4
Kr	0.5	Xe	0.4
Ar	0.8		

Installation

Vacuum Connection

STOP DANGER

Caution: overpressure in the vacuum system >1 bar

Injury caused by released parts and harm caused by escaping process gases can result if clamps are opened while the vacuum system is pressurized.

Do not open any clamps while the vacuum system is pressurized. Use the type clamps which are suited to overpressure.

STOP DANGER

Caution: protective ground

Incorrectly grounded products can be extremely hazardous in the event of a fault.

The gauge must be electrically connected to the grounded vacuum chamber. This connection must conform to the requirements of a protective connection according to EN 61010:

- CF connection fulfill this requirement
- For gauges with a KF flange, use a conductive metallic clamping ring

Caution

Caution: vacuum component

Dirt and damages impair the function of the vacuum component.

When handling vacuum components, take appropriate measures to ensure cleanliness and prevent damages.

Caution

Caution: dirt sensitive area

Touching the product or parts thereof with one's bare hands increases the desorption rate.

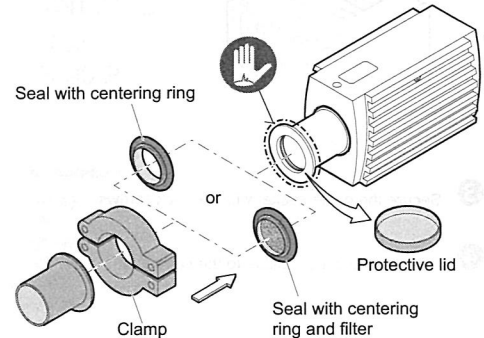
Always wear clean, lint-free gloves and use clean tools when working in this area.



The gauge may be mounted in any orientation. To keep condensates and particles from getting into the measuring chamber preferably choose a horizontal to upright position and possibly use a seal with a centering ring and filter.

The gauge is supplied with a built in grid. For potentially contaminating applications and to protect the electrodes against light and fast particles, installation of the optional baffle is recommended (→ [1]).

Remove the protective lid and install the product at the vacuum system.



Keep the lid.

Power connection

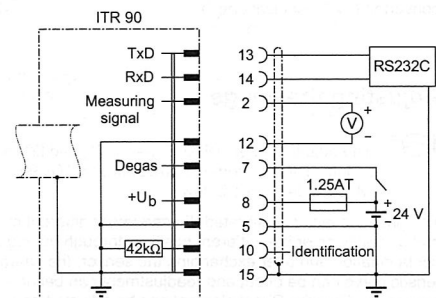


The following information on the electrical connection as well as the wiring diagram applies to ITR 90 only (→ [1] and [2] for details on the electrical connection and additional functions of ITR 90 P).



Make sure the vacuum connection is properly made (→ "Vacuum Connection").

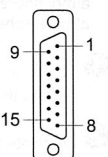
1 If no connection cable is available, make one according to the following diagram.



Electrical connection

Pin 2	Signal output (measuring signal)	0 ... +10 V
Pin 5	Supply common, GND	
Pin 7	Degas on, active high	+24 VDC
Pin 8	Supply	+24 VDC
Pin 10	Gauge identification	
Pin 12	Signal common, GND	
Pin 13	RS232C, Tx	
Pin 14	RS232C, Rx	
Pin 15	Shielding, housing, GND	

Pins 1, 3, 4, 6, 9 and 11 are not connected internally.



D-Sub, 15 pins female, soldering side



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